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A NEW FRESHWATER NEREID FROM CHINA.

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It is well known that certain marine polychaetes of the European and American coasts are often found in the brackish waters of estuaries or even in the fresh water of the lower part of rivers but apparently without being able to breed in these locations. There are, however, certain forms so extremely adaptable that they seem to live and breed equally well in marine brackish and fresh water, such being notably the South American *Namanereis ouanaryensis* (Gravier) and *Namanereis quadraticeps* (Gay). Other species of this same genus *Namanereis* (*Lycastis* of most authors) are found only in fresh water, and representatives of several other genera of Polychaeta, mostly monotypic, are likewise restricted to fresh water.

Of the numerous families of Polychaeta only four have fresh-water representatives; and of all the truly fresh-water forms nearly two-thirds belong to the family Nereidae. A species of the latter family apparently not hitherto recorded lives in the fresh water of the rice-fields about Canton, China. The writer is indebted for a gravid female of this species, which represents an apparently new generic type, to Mr. Arthur S. Campbell, formerly of the Canton Christian College. Mr. Campbell supplies the following note on this nereid: "The worm was taken in great numbers at Canton, China, during the spring and summer months of the last year. Specimens are frequent in the rice-fields surrounding Canton and in the low-lands as far as Hongkong. The natives use them as an article of food after suitable preparation. The worms are caught in nets or baskets set as traps at the outlets of the rice-

fields and the worms are washed into these in great quantities. They are then either sold fresh or, oftener, laid out in flat baskets in the sun and dried. After thorough dehydration in the tropical sun-light for several days, they are reduced to a fine meal or flour. The flour is kept in bags against the winter months when food is scarce. The worms are locally known as 'woh-chung,' meaning literally 'rice' or 'field worm.' They are well known to all Cantonese villagers.

"It is to be presumed from its general habitat that the worms breed during the rainy spring when the fields are full of water and sunshine is at its maximum, and food is abundant in the shallow water, which is seldom over a foot in depth. Mature worms have been found always in fields or, more rarely, in the shallow canals, but never in the deeper water of the rivers. There is no doubt that the worms are strictly fresh-water forms, closely associated with growing rice-plants which can not withstand any degree of saltiness."

Chinonereis, gen. nov.

Prostomium, antennae, palpi and tentacular cirri as in the genus *Nereis*. Four eyes present, arranged in a trapezium. Proboscis wholly lacking chitinous paragnatha, only soft paragnatha being present and these, in the genotype, wholly absent from areas I and II. Parapodia distinctly biramous. Notopodium with a dorsal lamella which bears the cirrus and with a subfascicular lamella. Notopodium with setae in one or two groups, the cirrus not elevated on a tubercle or special lobe. Setae all composite heterogomphs of a single type.

Genotype.—*Chinonereis edestus*, sp. nov.

Undoubtedly this form is closely related to *Tylorhynchus* Grube, the type of which, *T. chinensis*, occurs at Shanghai. The parapodia are similar in general character; but in the present form all setae are of a single type, whereas in *Tylorhynchus* they are of three different forms. In the latter genus also the soft paragnatha are present on all areas and are apparently in general more strongly developed than in the present form. In *Tylorhynchus* the parapodia of the twenty-one anterior segments are conspicuously different in size and in some details of structure, as in the setae, from those of the posterior region, whereas in *Chinonereis* there is only a very gradual change in size and form in going caudad.

Chinonereis may be separated from other genera of the Nereidae lacking chitinous paragnatha by means of the following key:

- a. Proboscis with no paragnatha
 - b. With dendritic branchiae.....*Dendronereis* Peters.
 - b. With no dendritic branchiae.
 - c. Notopodium rudimentary.

- d. Prostomium anteriorly deeply incised; tentacular cirri on each side arising from a common basal article.....
Lycastoides Johnson.
- d. Prostomium not thus incised; tentacular cirri on each side not thus arising from a common basal article.....
Namanereis Chamberlin.
- c. Notopodium well developed.
 - d. Peristomium with parapodia and setae.....*Micronereis* Claparède.
 - d. Peristomium without parapodia and setae.....
Leptonereis Kinberg.
- a. Proboscis with soft paragnatha.
 - b. Setae of two or three kinds.
 - c. Setae of two kinds; eyes none.....*Chaunorhynchus* Chamberlin.
 - c. Setae of three kinds; four eyes present*Tylorhynchus* Grube.
 - b. Setae all of one kind.
 - c. Setae homogomphs; dorsal cirrus free, attached above the lamella to the surface of the somite.....*Tylonereis* Fauvel.
 - c. Setae heterogomphs; dorsal cirrus attached to the dorsal lamella apically.....*Chinonereis* gen. nov.

***Chinonereis edestus*, sp. nov.**

The general color of the body is a pale buff, darker, more brownish at anterior end; the parapodia lighter, they and the adjacent part of segments showing a slight greenish tinge. Eyes black. Setae colorless.

Length, 75 mm. Greatest width, exclusive of parapodia, 5.6 mm. Body behind the three or four anterior segments, which are narrower and darker, of nearly uniform width to the middle of the length, behind which it narrows uniformly and decidedly to the caudal end.

Prostomium subquadrate in dorsal view. Bearing anteriorly a pair of conical tentacles. Each palpus attached at an anterolateral corner in front of the anterior eyes. Eye-area trapeziform, the anterior eyes being larger and more widely separated than the posteriors. Eyes of each pair connected by a distinct furrow; a deep median longitudinal furrow extending from anterior margin to the first transverse furrow, less pronounced caudad of this furrow.

Proboscis with basal ring encircled with a single series of large contiguous elevations or papillae which above are simply rounded (areas V and VI) but are more pointed below (areas VII and VIII) with the apices turned more or less proximad. In the maxillary ring there are no papillae or paragnatha above (areas I and II), but there is a double transverse series of small, rounded, papilliform paragnatha on the ventral side near middle of division (areas III and IV).

Peristomium dorsally of nearly the same length as the succeeding somite. Extending forward on each side of the prostomium where it bears the anterior tentacular cirri almost directly laterad of the anterior eye. Anterior dorsal cirrus slenderly conical, smooth, longer than the ventral cirrus. Posterior ventral cirrus about equal to the anterior ventral. Posterior

dorsal cirrus much longer than the others, reaching to the fourth segment behind the peristomium; more or less ringed over proximal half.

Metastomial somites in general about equally convex above and below. Longest near the twentieth segment where they are about 2.75 times wider than long. Pygidium missing from type specimen.

In the notopodia of the anterior region the dorsal lamella is longer than broad and is only about twice as wide as is the cirrus which it bears distally. The notopodial fascicle single and of moderate size, the acicula ordinarily two in number. Below the fascicle a conical lamella. The neuropodium with the fascicle double, the upper group being the larger. Aciculum shorter than the notopodials. Ventral cirrus free. In the posterior region the dorsal lamella becomes very much broader and somewhat bilobed, with the upper of the lobes the shorter and bearing the cirrus. The fascicles are much larger with the setae longer, those of the neuropodial fascicle not in two distinct groups. Ventral cirrus at base of neuropodial lobe long and subulate.

Shafts of setae strongly cross-striate. Tips, or blades, long and finely pointed, finely toothed along one edge as usual. Varying somewhat in size, but all of the same type.

Type in M. C. Z.